CRITIQUE SUMMARY

Critique No.: CR-CA-2005-0007 **Date of Critique**: September 13, 2005

Critique Leader: Joel Scott

Meeting Participants: (individual discussions held, no group meetings) L. Vogt, R. Grandinetti, W. Anderson, J. Meier, H. Gassner.

Brief Event Description: On Monday Sept. 12, 2005, the Water Group found a larger then normal makeup trend for the NSRL Power Supply cooling system. An inspection of system found a small leak in Building 930A piping from a pressure gauge. Approximately 50-60 gallons of water with 1630 pCi/L of tritium leaked from system with 30-50 gallon escaping the building to ground in the Booster transformer yard.

Reference Materials: Water Group Makeup Monitors

RELEVANT FACTS AND DATA ASSOCIATED WITH THE EVENT: A review of water trend log showed a small leak from 9-9 to 9-13-05. The CAS watch received two common alarms for this system over two days, at 1735 on 9-9-05 and at 1315 on 9-11-05. Both alarms cleared within several seconds and although both operators looked at the screens, they did not note makeup trend. CAS tours of C-AD including Building 930 did not see leak since most of the water leaked to outside building and there was only a small puddle in an out of the way spot.

Sequence of events:

At 1735 on 9-9-05 the CAS watch received common alarm 957 2/3, which alarm cleared in 5 seconds. Operator checked screen and common alarm panel with no indications of alarm. A tour of the site later in the shift showed no apparent problems. The small leak in 930A was not seen.

Three other alarms on 957 2/3 were received by CAS at 0825 and 2247 on 9-10-05, a third came in at 1315 on 9-11-05. All alarms cleared within a few seconds and investigation by CAS watch showed nothing abnormal.

On Monday, 9-12-05 the Water Group noticed the leak trend for NSRL power supply and found the gauge leak. The system was secured and PE plumbers repaired the leak on 9-13-05.

ANALYSIS OF RELEVANT FACTS AND DATA:

Causal Factor:

1. The alarms received by CAS Watch were not specific to makeup alarms, and with time-delays in system-screens had not updated that makeup came in when watch checked screen.
2. Although there is a small amount of tritium in this system, C-AD has concern levels set up for systems with 5000 pCi/L tritium or higher. These systems of concern have more alarm features to aid in identifying what has alarmed.

Recommended Corrective Actions:

1. Water Group experts on PLC system need to train or update training to CAS watch on expectations for alarm response.
2. The systems with >5000 pCi/L of tritium have makeup alarms locked in with instructions to CAS watch before resetting. C-AD should consider extending this feature to all systems.
3. The NSRL Power Supply cooling system should be a non-radioactive system. C-AD should consider draining system and airing it to remove tritiated water from legacy systems.
4. Other, low-level tritiated water systems should be reviewed to determine if removal of tritiated water is feasible.

CRITIQUE SUMMARY

Lessons Learned:
Better training and information for CAS watch will make it easier to identify real problems in all our water systems.

Signature:

Joel Scott
Critique Leader

September 13, 2005
Date